

REMARKS - General

Remark 1:

Examiner states, "The association of the added box in Fig. 3 with box element 13 is unclear." Proposed First Substitute drawings Sheet 1 are submitted concurrently herewith. Fig. 3 has been amended to clarify that the box element with A and D converter, signal conditioning device and solid state memory is an exploded view of electronic device 13. An arrow with the number 13 to the right of this exploded view is intended to resolve this confusion. Applicant respectfully requests Examiner withdraw the objections to the Drawings.

Remark 2:

In the "SUMMARY OF THE INVENTION," applicant combine the phrase "critical parameters related to chemical / material analysis techniques", into the previous sentence to prevent confusion. There is not categorical difference between these techniques, and the previously listed techniques such as stress/strain, pH, etc..

Remark 3:

Because it was unclear to the Examiner what was meant by "capital goods", the

Applicant has narrowed the Specification and Claims by removing all instances of the phrase "capital goods" and replacing it with "semiconductor substrate". In the claims, "capital goods" in line 2, line 18 and line 22 of claim 18, was changed to "semiconductor substrate". The application no longer covers the manufacturing industries farming, mining, construction, non-electrical machinery, transportation equipment (including automobiles), food products, chemicals (including petrochemicals), textiles, and utilities. Instead, the application has been narrowed to cover only the microelectronics industry. No new matter is added.

Remark 4:

The applicant requests reconsideration and withdrawal of the objection as being unpatentable over the prior art since the applicant's claims are non-obvious. Incorporating a recording device into semiconductors is "well known", only to the extent that the semiconductor material is a necessary component in the fabrication of those recording devices. This invention claims the attachment of a fully fabricated recording device to the surface of a partially fabricated semiconductor surface. Incorporating a storage device to a partially fabricated semiconductor surface is not obvious. Renken et al incorporated only sensors to the substrate surface, and the incorporation of sensors and recording device to the substrate surface is not well known. In essence, the examiner states the individual parts to the applicant's invention are well known to one of ordinary skill. The combination of such ordinary parts, into a novel and non-obvious apparatus is where novelty resides. If the invention were in fact obvious, because of its advantages,

those skilled in the art surely would have implemented it by now. The fact that those skilled in the art have not implemented the invention, despite its great advantages, indicates that it is not obvious. Applicant respectfully requests Examiner withdraw this rejection of the Claims.

Remark 5:

The Examiner states, "Isolation from external hostile environments is a known expedient to protect the equipment and get more accurate measurements." The use of these materials as isolation materials to protect electronics equipment placed on a partially completed semiconductor substrate, to get more accurate results is not one of ordinary skill. In this particular application, there is little vertical dimensional allowance above the semiconductor substrate. The use of ultra-low dielectric constant materials such as aerogels is thus required, so that a thin slab of isolation material between the substrate and the electronics will still provide sufficient thermal isolation. The requirements for isolation in prior-art applications did not demand the use of such ultra-low dielectric constant materials. Applicant respectfully requests Examiner withdraw this rejection of the Claims.

Remark 6:

The Examiners states that monitoring liquid environments appears to be well known.

The monitoring of liquid environments is not included in the new claims in this

application. Claims 18-33 does not mention the monitoring of liquid environments.

Applicant respectfully requests Examiner withdraw this rejection.



CONCLUSIONS

Applicant respectfully submits that for all the foregoing reasons, the claimed subject matter describes patentable invention. Furthermore, Applicant submits that the specification is adequate and that the claims are in a condition for allowance. No new matter has been entered.

Applicant hereby respectfully requests Examiner to withdraw the cited references as anticipating or obviating prior art, enter these amendments, find them descriptive of useful, novel and non-obvious subject matter, and authorize the issuance of a utility patent for the truly meritorious, deserving invention disclosed and claimed herein.

Nothing herein shall be construed as establishing indirectly the basis for any prosecution history, file wrapper estoppels, or similar in order to limit or bar any claim of infringement of the invention described herein, either directly or under applicable doctrine of equivalents.

Conditional Request for Constructive Assistance

Applicant has amended the specification and claims of this application so that they are proper, definite, and define novel structure which is also unobvious. If, for any reason this application is not believed to be in full condition for allowance, applicant respectfully

Amendment and Response to Final Office Action mailed 9/4/03

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MANUFACTURING EQUIPMENT AND FACILITIES

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request the constructive assistance and suggestions for the Examiner pursuant to M.P.E.P.
§ 2173.02 and § 707.07(j) in order that the undersigned can place this application in
allowable condition as soon as possible and without the need for further proceedings.

Respectfully submitted,

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By: _____

Date: 11/9/03

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